

Serial No. **10/644,036**

Docket No. **P-0576**

Amdt. dated March 5, 2007

Reply to Office Action of October 6, 2006

REMARKS

By the present response, Applicants have amended claims 2, 7-10, 13 and 15-19 to further clarify the invention. Claims 2-19 are pending in this application. Reconsideration and withdrawal of the outstanding rejections and allowance of the present application are respectfully requested in view of the above amendments and the following remarks.

In the Office Action, claim 8 has been rejected under 35 U.S.C. § 112, second paragraph.

Claims 2-7 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Japanese Patent Publication No. 2001-110939 (Hirobumi et al). Claims 8-18 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over the admitted prior art (APA) in view of Hirobumi et al.

35 U.S.C. §112 Rejections

Claim 8 has been rejected under 35 U.S.C. §112, second paragraph. Applicants have amended this claim to further clarify the invention and respectfully request that this rejection be withdrawn.

35 U.S.C. §102 Rejections

Claims 2-7 have been rejected 35 U.S.C. §102(b) as being anticipated by Hirobumi et al. Applicants respectfully traverse these rejections.

Hirobumi et al. discloses that a substrate comprising independent copper circuit patterns comprising no partial electrolytic plating lead wire is formed and a pattern is formed with a solder resist. Non-electrolytic copper is deposited on the entire surface of the substrate, and a

solder surface is coated with a plating resist, with the non-electrolytic copper on a part surface dissolved and removed by etching. The pad of a part surface, copper-plated through hole, pad of solder surface, and non-electrolytic copper of solder surface are used as a conductor to precipitate an electrolytic nickel/gold coat on the copper pad of part surface. After the plating resist on the solder surface is removed, the non-electrolytic copper of solder surface is dissolved by etching before the pad of solder surface is processed with pre-flux. Thus, with no space for the conductive line for partial electrolytic plating is required. An electrolytic nickel/gold coat is formed on a part surface while a pre-flux coat is formed on a solder surface.

Regarding claim 2, Applicants submit that Hirobumi et al. does not disclose or suggest the limitations in the combination of this claim. For example, the Examiner appears to assert that Hirobumi et al. discloses supplying power to the connection pads through the power connection portion and forming a gold-plated layer on the connecting pads, in step 6, lines 1-3 and Figure 5. However, these portions merely disclose to use the non-electrolytic copper of electrolysis nickel/gold plate process solder side as a flow object for partial electrolytic plating and that the electrolysis nickel/gold coat is deposited in the copper and side of the exposed component side by electrolytic plating, and gives example electrolytic plating conditions. These portions do not disclose or suggest supplying power to the connection pads through the power connection portion and forming a gold-plated layer on the connecting pads, as recited in the claims of the present application. Hirobumi et al. does not disclose or suggest supplying power

to connection pads or supplying power to connection pads through the power connection portion.

The Examiner also appears to assert that Hirobumi et al. step 6, lines 1-2 disclose using some of the circuit patterns provided in the substrate as a power connection portion and connecting the power connection portion to an external power source, as recited in the claims of the present application. However, as noted previously, these portions do not disclose or suggest using some of the circuit patterns as a power connection portion or connecting the power connection portion to an external power source. Hirobumi et al. merely discloses partial electrolytic plating where electrolysis nickel/golden coat is deposited in the copper pad side of the exposed component side by electrolytic plating.

Moreover, Applicants submit that Hirobumi et al. does not disclose or suggest removing a portion of the photoresist to expose the connection pad and exposing some of the circuit patterns to form a power connection portion, or coating a conductive layer on the surface of the substrate for connecting between the power connection portion and the external power source, as recited in the claims of the present application. Again, the Examiner appears to assert that step 6 in Hirobumi et al. discloses these limitations. However, as has been noted previously, Hirobumi et al. does not disclose or suggest circuit patterns to form a power connection portion or connecting between the power connection portion and the external power source. Applicants

respectfully request the Examiner to specifically point out where in the cited reference each of these limitations is disclosed or suggested in Hirobumi et al.

Regarding claims 3-7, Applicants submit that these claims are dependent on independent claim 2 and, therefore, are patentable at least for the reasons noted previously regarding this independent claim.

Accordingly, Applicants submit that Hirobumi et al. does not disclose or suggest the limitations in the combination of each of claims 2-7 of the present application. Applicants respectfully request that these rejections be withdrawn and that these claims be allowed.

35 U.S.C. §103 Rejections

Claims 8-18 have been rejected under 35 U.S.C. §103(a) as being unpatentable over the APA in view Hirobumi et al. Applicants respectfully traverse these rejections.

Regarding claim 9, Applicants submit that none of the cited references, taken alone or in any proper combination, disclose, suggest or render obvious the limitations in the combination of this claim of, *inter alia*, supplying power to the bonding pad through the first power connection portion for forming a gold-plated layer on the bonding pad, removing the connection from the external power source to the first power connection portion, connecting the second power connection portion to the external power source and coating a plating resistance resist at the surface of the substrate with the bonding pad formed thereon to shield it, or supplying power to the ball pad through the second power connection portion for forming a

gold-plated layer on the ball pad. The Examiner admits that the APA does not disclose or suggest these limitations but asserts that Hirobumi et al. discloses these limitations. However, as noted previously, Hirobumi et al. does not disclose or suggest these limitations in the claims of the present application. As noted previously, Hirobumi et al. does not disclose or suggest supplying power to the bonding pad for forming a gold-plated layer on the bonding pad, or connecting a power connection portion to an external power source.

Regarding claims 8 and 10-18, Applicants submit that these claims are dependent on one of independent claims 1 and 9 and, therefore, are patentable at least for the same reasons noted previously regarding these independent claims.

Accordingly, Applicants submit that none of the cited references, taken alone or in any proper combination, disclose, suggest or render obvious the limitations in the combination of each of claims 8-18 of the present application. Applicants respectfully request that these rejections be withdrawn and that these claims be allowed.

Further, Applicants submit that although the Examiner has provided no portions of any reference rejecting claim 19, claim 19 is patentable over the asserted references for reasons similar to those mentioned previously regarding claims 2 and 9.

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CONCLUSION

In view of the foregoing amendments and remarks, Applicants submit that claims 2-19 are now in condition for allowance. Accordingly, early allowance of such claims is respectfully requested. If the Examiner believes that any additional changes would place the application in better condition for allowance, the Examiner is invited to contact the undersigned attorney, Frederick D. Bailey, at the telephone number listed below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,
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